

FORM PTO-1390 (REV. 5-93)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER TMI-103
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)		U.S. APPLICATION NO. (if known, see 37 CFR 1.5) 09/857043

International Application No. PCT/JP99/06826	International Filing Date December 6, 1999	Priority Date Claimed December 4, 1998
--	--	--

Title of Invention **SERVICE UTILIZATION ID NUMBER SETTLEMENT SYSTEM**

Applicant(s) for DO/EO/US **T. DOKI (see attached)**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

[X] LIST OF INVENTOR'S NAME AND ADDRESS.

[x] THIS APPLICATION IS BEING FILED WITHOUT AN EXECUTED DECLARATION, WHICH WILL BE FILED LATER.

U.S. Application No. (if known, see 37 CFR 1.5) 09/857043		International Application No. PCT/JP99/06826		Attorney's Docket Number TMI-103	
---	--	---	--	-------------------------------------	--

17. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS	PTO USE ONLY
<u>Basic National Fee (37 CFR 1.492 (a)(1)-(5)):</u> Search Report has been prepared by the EPO or JPO \$860.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) \$690.00 No international preliminary examination fee (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445 (A)(2)) \$710.00 Neither international examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(A)(2)) paid to USPTO \$1000.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2) to (4) \$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT = \$ 860.00					
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				+ \$ 130.00	
Claims	Number Filed	Number Extra	Rate		
Total	17 -20 =	0	x \$18.00	\$ 0.00	
Independent	5 - 3 =	2	x \$80.00	\$ 160.00	
Multiple dependent claim(s) (if applicable)				+ \$270.00 \$ 0.00	
TOTAL OF ABOVE CALCULATIONS = \$ 1,150.00					
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$ 0.00	
SUBTOTAL = \$ 1,150.00					
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+ \$ 0.00	
TOTAL NATIONAL FEE = \$ 1,150.00					
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property.				+ \$ 0.00	
TOTAL FEES ENCLOSED = \$ 1,150.00					
				Amount to be:	
				Refunded \$	
				Charged \$	

a. ☒ A check in the amount of \$ 1,150.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 50-1417 in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
overpayment to Deposit Account No. 50-1417. A duplicate copy of this sheet is enclosed.

Note: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive
(37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

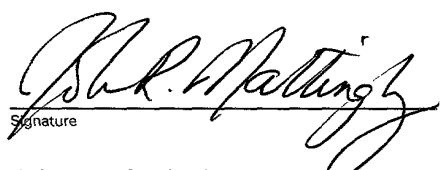
SEND ALL CORRESPONDENCE TO:


MATTINGLY, STANGER & MALUR, P.C.

104 East Hume Avenue

Alexandria, Virginia 22301

(703) 684 -1120


 Signature
 John R. Mattingly
 Name


24956
 PATENT TRADEMARK OFFICE

30,293
 Registration Number

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

T. DOKI

Serial No.

Filed: May 31, 2001

For: SERVICE UTILIZATION ID NUMBER
SETTLEMENT SYSTEM

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows.

IN THE CLAIMS

Rewrite claims 7, 11 and 14-17 as follows:

7. (Amended) The service utilization ID number settlement system according to claim 1 wherein, when judging whether said service can be provided, if the ID number has not been validated, or the amount of money equivalent to the service amount to be provided is smaller than the current balance, said settlement authentication device prohibits the provision of the service.

11. (Amended) The service utilization ID number settlement system according to claim 1 wherein, when judging whether said service can be provided, if the current balance less the amount of money equivalent to the service amount to be provided is smaller than a reference amount of money, said

settlement authentication device causes the transmission of warning information to said information terminal device.

14. (Amended) The service utilization ID number settlement system according to claim 4, wherein the ID number used in said settlement authentication device is a sub-ID number generated in association with each service.

15. (Amended) The service utilization ID number settlement system according to claim 1 wherein said ID number is different for each of said media units.

16. (Amended) The service utilization ID number settlement system according to claim 1 wherein:

the settlement terminal device can transmit user deposit information, and

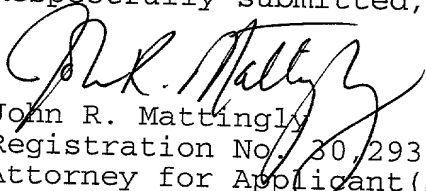
when said deposit information is received together with an ID number, the settlement authentication device sets the result of addition of the deposit information to the balance information as the new balance information.

17. (Amended) Media, on which is recorded an ID number, and which can be used in the service utilization ID number settlement system according to claim 1.

REMARKS

Examination is requested.

Respectfully submitted,


John R. Mattingly
Registration No. 30,293
Attorney for Applicant(s)

MATTINGLY, STANGER & MALUR
104 East Hume Avenue
Alexandria, Virginia 22301
(703) 684-1120
Date: May 31, 2001

MARKED UP VERSION OF REWRITTEN CLAIMS

7. (Amended) The service utilization ID number settlement system according to claim[s] 1 [through 6,] wherein, when judging whether said service can be provided, if the ID number has not been validated, or the amount of money equivalent to the service amount to be provided is smaller than the current balance, said settlement authentication device prohibits the provision of the service.

11. (Amended) The service utilization ID number settlement system according to [any one of] claim[s] 1 [through 10,] wherein, when judging whether said service can be provided, if the current balance less the amount of money equivalent to the service amount to be provided is smaller than a reference amount of money, said settlement authentication device causes the transmission of warning information to said information terminal device.

14. (Amended) The service utilization ID number settlement system according to claim[s] 4 [or 5], wherein the ID number used in said settlement authentication device is a sub-ID number generated in association with each service.

15. (Amended) The service utilization ID number settlement system according to [any one of] claim[s] 1 [through 14,] wherein said ID number is different for each of said media units.

16. (Amended) The service utilization ID number settlement system according to [any one of] claim[s] 1 [through 15,] wherein:

the settlement terminal device can transmit user deposit information, and

when said deposit information is received together with an ID number, the settlement authentication device sets the result of addition of the deposit information to the balance information as the new balance information.

17. (Amended) Media, on which is recorded an ID number, and which can be used in the service utilization ID number settlement system according to claim[s] 1 [through 16].

14/PRTS

09/857043
JC18 Rec'd PCT/PTO 31 MAY 2001

DESCRIPTION

SERVICE UTILIZATION ID NUMBER SETTLEMENT SYSTEM

TECHNICAL FIELD

This invention concerns a service utilization ID number settlement system, and in particular a service utilization ID number settlement system enabling the utilization of services provided from a service provision device via an information terminal device, using an identification (ID) number.

BACKGROUND ART

As one current service utilization ID number settlement system, a telephone communication service system is known whereby users can receive telephonic communication services using these ID numbers. When utilizing such a telephonic communication service system, users purchase, from a store or from a vending machine, a card bearing an ID number. This card bears an ID number, but at the time of purchase, this ID number is covered by a seal so that it cannot be seen. The user, having purchased the card, removes the seal or coating affixed over the ID number and reads the ID number.

The user first telephones an access point, determined in advance, using a public telephone or other information terminal device. An instruction to input the ID number is then

transmitted from the access point, and in response the user inputs the ID number born by the card. The telephone company (operator) providing the service confirms this ID number, and in case of agreement with an ID number registered in advance by an authentication device, permits telephonic communication. The user then dials the telephone number of the other party, and can receive telephonic communication or other services. Fees for the telephonic communication services received are subtracted from a received amount (the amount of money paid to the store or vending machine at the time of card purchase by the user), provided to correspond to the ID number of the authentication device. In this way, payment processing and balance management for telephone service fees are performed by a central processing device provided by the operator.

In such a conventional service utilization ID number settlement system, even when a card or other media bearing an ID number covered with a seal is purchased by a user, prior to settlement, the card itself has merchandise value (the obligation to provide non-gratis services). That is, this media has merchandise value at the time of shipment. Hence there is the disadvantage that losses are incurred in the event that such merchandise is lost in or stolen from a store prior to purchase by users.

There is the further disadvantage that, if pamphlets or similar are issued and media bearing ID numbers are enclosed to provide various services as advertisement promotion,

because the media itself has merchandise value, it cannot be distributed in advance by means of advertisement promotion.

There is also the disadvantage that, whereas in the past such media has been displayed and sold in stores in large quantities, the store must purchase the required quantities in advance, and moreover must strictly manage inventory.

Moreover, in conventional service utilization ID number settlement systems, a single service has been fixed for a single media unit. Consequently it has not been possible for users to receive a plurality of services through purchase of a single media unit, nor has it been possible to freely modify the contents of services after purchase of the media.

This invention was devised in order to eliminate the above-described disadvantages of conventional service settlement systems using ID numbers to enable service utilization. An object of this invention is to provide a settlement system using ID numbers which enables utilization of services offered only after payment of charges (settlement) and after an ID number is read by a settlement terminal device, without the media having any merchandise value (obligation to provide non-gratis services) at the time of ID number acquisition, that is, at time of shipment.

DISCLOSURE OF THE INVENTION

The service utilization ID number settlement system of this invention has, at least, a settlement authentication

device and settlement terminal device which are mutually connected by a network, and employs media on which is recorded an ID number.

This invention applies to a service utilization ID number settlement system to provide services based on an amount of money paid in advance by a user. This invention comprises:

1) a settlement terminal device, configured to enable, at the time of settlement of prescribed media, the reading of the ID number recorded on the media, the causing to be input of balance information equivalent to the amount of money paid associated with the ID number, and the transmission of the ID number in association with the balance information to be designated; and,

2) a settlement authentication device, configured to enable the storing of balance information associated with an ID number when said ID number is transmitted, and when there is a request for service from an information terminal device operated by a user, the judging of whether service can be provided referring to the ID number and balance information, and, when it is judged that service can be provided, the permitting of provision of service to the information terminal device, and the subtracting of an amount of money corresponding to the service amount from the balance information.

A second embodiment of this invention is applied to service utilization ID number settlement systems which provide

services based on an amount of money paid by the user in advance. This invention comprises:

1) a settlement terminal device, configured to enable the reading of an ID number recorded on prescribed media at the time of settlement of said media, the causing of input of service specification information to specify the service and the balance information equivalent to the amount paid, corresponding to the ID number, and the transmission of the ID number in association with balance information and service specification information;

2) a settlement management device, configured to enable the referencing of the ID number together with transmitted service specification information when an ID number has been transmitted from the settlement terminal device, and the transmission of the ID number and balance information to the settlement authentication device associated with the service specified by the service specification information; and,

3) at least one settlement authentication device, configured to enable the association of balance information to an ID number transmitted from the settlement management device and the storage of same, and, when there is a request for service from an information terminal device operated by a user, the judgment of whether or not service can be provided, referencing the ID number and balance information, and, when it is judged that service can be provided, the permitting of provision of service to the information terminal device, and

the subtracting of an amount of money corresponding to the service amount from the balance information.

A third embodiment of this invention is applied to service utilization ID number settlement systems which provide services based on an amount of money paid by the user in advance. This invention comprises:

1) a settlement terminal device, configured to enable the reading of an ID number recorded on prescribed media at the time of settlement of said media, the causing of input of balance information equivalent to the amount paid associated with the ID number, and the transmission of the ID number in association with the balance information;

2) a settlement management device, configured to enable the validation of the ID number, association with the balance information, and storage when an ID number and balance information have been transmitted from the settlement terminal device, and, when there is a query from any settlement authentication device as to whether a specific ID number is validated, the judgment of whether the ID number is validated, and transmission of the result, together with the associated balance information; and,

3) at least one settlement authentication device, configured to enable the association of balance information to a sub-ID number and the storage of same, when there is a request for service together with a specific ID number from an information terminal device operated by a user, the judgment of whether or not the ID number coincides with a sub-ID number

of with an ID number stored in the settlement management device, and, when the specific ID number does not coincide with a sub-ID number, the generation of a new sub-ID number.

As a fourth embodiment of this invention, there is also the following case. At the time of media settlement, a settlement terminal device reads the ID number recorded on the media, causes the input of service specification information specifying one or more services and individual balance information equivalent to the amount of money to be allocated for each specified service from amount the amount of money paid, and transmits the ID number and the associated service specification information and individual balance information to a settlement management device.

When an ID number is transmitted from the settlement terminal device, the settlement management device references the ID number together with the transmitted service specification information, and transmits, to each of the settlement authentication devices associated with the one or more services specified by the service specification information, individual balance information associated with the service specification information and the ID number.

Each settlement authentication device is configured to enable storage of individual balance information, associated with an ID number transmitted from the settlement management device.

A fifth embodiment of this invention is applied to service utilization ID number settlement systems which provide

services based on an amount of money paid by the user in advance. This invention comprises:

1) a settlement terminal device, configured to enable the reading of an ID number recorded on prescribed media at the time of settlement of said media, the causing of input of balance information equivalent to the amount paid associated with the ID number, and the transmission of the ID number in association with the balance information to a settlement management device;

2) a service selection device, configured to enable the presentation of an ID number from an information terminal device operated by a user together with the receipt of service specification, and the transmission of service specification information specifying a service, together with individual balance information allocated for the service;

3) a settlement management device, configured to enable the transmission of individual balance information associated with services and the ID number to each settlement authentication device associated with one or more services specified by the service specification information, when an ID number is transmitted from the settlement terminal device and in addition service specification information and individual balance information are transmitted from the service selection device; and,

4) one or more settlement authentication devices, configured to enable the association of individual balance information with an ID number transmitted from the settlement

management device and storage of same, the judgment of whether a service can be provided, referring to the ID number and individual balance information, when there is a request for service from an information terminal device operated by a user, and, when it is judged possible to provide the service, the permission of provision of the service to the information terminal device and the subtraction of an amount of money equivalent to the service amount from the individual balance information.

The relation between the media and the service may also be determined in advance. That is, this invention is a service utilization ID number settlement system for the provision of prescribed services based on an amount of money paid in advance by users, and comprising:

1) a settlement terminal device, configured to enable, at the time of settlement for prescribed media associated with a prescribed service, the reading of an ID number recorded on the media, the causing of input of balance information equivalent to the amount paid associated with the ID number, and the transmission to a settlement management device of the above ID number associated with the above balance information; and,

2) a settlement authentication device, configured to enable the storage of the above balance information associated with the above ID number when the ID number has been transmitted, when there is a request for service from an information terminal device operated by a user, the judgment

of whether the service can be provided referring to the above ID number and balance information, and when it is judged that the service can be provided, the permission of provision of the service by the above information terminal device, and the subtraction of an amount of money equivalent to the service amount from the balance information.

Here, when the above settlement authentication device judges whether service can be provided or not, if the ID number has not been validated, or if the amount of money equivalent to the service amount to be provided is larger than the current balance, provision of the service is forbidden.

The following is also possible. That is, the above settlement authentication device is configured to enable storage of user-specific information which identifies the user associated with an ID number, and when a new ID number is transmitted from the settlement terminal device, user-specific information transmitted together with this new ID number is referenced, a judgment is made as to whether an ID number exists which is already registered for the same user, and, if an already-registered ID number exists, the new ID number is associated with this already-registered ID number and stored. When judging whether services can be provided or not, if the amount of money equivalent to the amount of service to be provided is larger than the sum of the balance associated with the already-registered ID number and the balance associated with the new ID number, then provision of the service is prohibited.

of the ID number recorded on this printed slip and other information, and transmission of the input ID number and other information, as well as the fact of the user's having paid the above amount of money.

The above printed slip may be provided in a form which enables the cutting away of a plurality of printed slips from a single sheet with different ID numbers.

The above ID numbers may be different for the above media.

The above settlement terminal device may be capable of transmission of user payment information, and the settlement authentication device may, when it has received an ID number together with the above payment information, take the balance information added to the payment information as the new balance information.

ID numbers transmitted to the above settlement authentication device may be sub-ID numbers generated in association with each service.

This invention is media on which is recorded an ID number which can be used by a service utilization ID number settlement system of this invention. Here "media" refers to any object on which information is recorded by some means, configured to enable the reading of an ID number and other information by an information reading device, such as a POS terminal. For example, this includes a form bearing a barcode associated with information, a magnetic card on which information is magnetically recorded, and an IC card in which information is recorded as digital data, as well as a floppy

disk capable of recording collected information. Further, when an ID number transmitted by the above settlement terminal device is associated with a different ID number within the above settlement authentication device or the above settlement management device, and is stored or transmitted, and when there is a request for service by the above information terminal device, it is also possible to configure the system such that a request can be issued using only the associated ID number. If this method is used, because the ID number transmitted by the above settlement terminal device and the ID number used by the above information terminal device are different, by hiding the ID number used at the above information terminal device by means of a seal or similar, or else by sending only to the user of the above information terminal device or taking some other measure to inform only the user, safety is maintained even if the ID number transmitted by the above settlement terminal device is learned by another party. The system may also be configured to enable the registration of a password when, separately from an ID number, the user performs settlement using a settlement terminal device, or when accessing a service authentication device or service management device. A settlement authentication device is set such that, when there is a query from a user, provision of service is permitted only when, in addition to a validated ID number, there is also matching of the password. Authentication by means of a password can apply

the techniques of the prior art. In this way, after settlement safety is maintained even if other parties learn the ID number.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing the configuration of the settlement system in a first embodiment of the invention. Fig. 2 is a block diagram showing a variation of the settlement system of the first embodiment. Fig. 3 is a block diagram showing a specific example of the settlement system of the first embodiment. Fig. 4 is a block diagram showing another specific example of the settlement system of the first embodiment. Fig. 5 is a block diagram showing the configuration of the settlement system of second and third embodiments of the invention. Fig. 6 is a diagram of transaction interrelations within this settlement system. Fig. 7 is a diagram showing the information content transmitted according to the above transaction interrelation diagram. Fig. 8 is a block diagram showing the configuration of the settlement system of a fourth embodiment of the invention. Fig. 9 is a flow chart of the settlement system of the fourth embodiment of the invention. Fig. 10 is a block diagram showing the configuration of the settlement system of an embodiment to which this invention is applied. Fig. 11 is a plane view showing an example of media specifying a service. Fig. 12 is a plane view showing media of the printed slip type. Fig. 13 is a plane view showing other media of the printed

slip type. Fig. 14 is a block diagram showing the configuration of a settlement system using printed slips.

BEST MODE FOR CARRYING OUT THE INVENTION

Below, the settlement system of this invention is explained in detail, referring to the attached drawings.

First Embodiment

Fig. 1 is a block diagram showing a first embodiment of a service utilization ID number settlement system of this invention. This system comprises media 10, a settlement terminal device 20, a settlement authentication device 30, and a service provision device 35.

The media used in the settlement system of this invention does not, at the time of shipment or at the time of acquisition, have any merchandise value (obligation to provide non-gratis services), and is distributed together with fliers, pamphlets, catalogs and similar to users by a service provider company intending to provide various services using the media, as well as by various service management companies supporting this information provision company. Alternatively, online slips and other media can be transmitted via telephone lines or by wireless communication or other means. The media bears, at least, an ID number, and also bears a service product name, service provider company name, service management company name, or similar. The amount of money paid may be printed in advance

on each media unit; in this case, the user pays an amount of money determined at time of settlement. Or, the system may be configured such that the user pays an arbitrary amount of money at time of settlement; in this case, an amount of money for payment is not printed on the media in advance. Normally, this type of information is recorded as barcode data. The information to be recorded as barcode data may be decided arbitrarily. However, if information recording is possible, an IC card, magnetic card or similar can be optionally employed. This media is normally created as a flyer, pamphlet, catalog, printed slip or similar. However, by holding the same information as that of the media within a device connected to the settlement terminal device, it is possible to render the media itself unnecessary if the ID number alone is input to the settlement terminal device.

Part of the media may be made separable. That is, the media 10, configured as part of a flyer, pamphlet, catalog or similar as shown in Fig. 1, comprises a part 10b bearing a barcode to be read by a settlement terminal device, described below, and a part 10a equivalent to a memo, printed such that at least the ID number can be recognized without using the barcode. ID numbers printed on media 10, or information enabling identification of ID numbers, are stored in the database of the settlement authentication device 30. In addition to the ID number, on the readable part 10b are printed, as barcodes or similar, the service product name, service supplier company name, service management company name,

and when necessary the amount of money for payment. The part 10a equivalent to a memo can be separated from the part 10b; on it is printed, at least, the ID number, in a manner enabling easy recognition by the user. At the time of its distribution or acquisition, this media 10 integrated with fliers, pamphlets, catalogs or similar bears an ID number, but the ID number cannot be used to receive non-gratis services, and therefore the media has no merchandise value (obligation to provide non-gratis services).

Settlement terminal devices 20 normally exist in locations throughout the country, such as convenience stores, kiosks, bookstores, video rental stores, and other retail stores; they are installed in stores which are convenient for users to make settlements. The settlement terminal device 20 is capable of reading the ID number recorded on the media 10. In cases where settlement amounts and other information is recorded on the media in addition to the ID number, settlement terminal devices are configured to enable the reading and transmission of this information. Normally, POS terminal devices (sales information management systems) provided in convenience stores and other stores can be used as these settlement terminal devices. POS terminal devices currently provided in stores are widely used for payment of telephone charges, water and gas charges, and other utility fees in addition to sales of merchandise within the store. This invention utilizes the POS terminal devices which are connected to networks and used in settlement of utility fees

and other bills. When using POS terminal devices 22, 24, 26 as settlement terminal devices 20, the barcode printed on the readable part 10b of the media 10 is read by an optical reading-type register or similar.

The settlement authentication device 30 is configured to enable communication with settlement terminal devices and storage of ID numbers and balance information, and may also be configured for storage of user-specific information (names, member codes and similar) which identifies users, in association with ID numbers. Communication is performed via an arbitrary network. The network may comprise public circuits or leased circuits. The settlement authentication device is installed, together with a service provision device 35, at the service provider company. However, the settlement authentication device may be installed at a remote site instead of at the service provider company. The settlement authentication device and service provision device may also be realized in the same computer hardware. Through the use of public circuits or leased circuits, the time from provision of information by settlement terminal devices 20 to the settlement authentication device 30 until execution of processing to validate use of the ID number by the settlement authentication device is such that operation is in realtime.

The service provision device 35 is configured to enable the provision of services to a terminal device 40 used by the user when accessed by the terminal device. Various types of services provided by the service provision device 35, that is,

various products for account settlement, are conceivable. Settlement of bills for sale of merchandise via the Internet, of bills for sale of non-gratis content via the Internet, of fees for connection to Internet service providers, of fees for information from audio information services, of the price of tickets for entertainment, events and concerts, of the price of airline, hotel and other tickets, and of fees for membership in various fan clubs, is conceivable. Settlement of international telephone bill, portable telephone bill, and other communication service fees is also possible. In such cases, information terminal devices 40 include various communication terminals on communication circuits, and include telephone sets and communication terminals for fixed circuits for domestic communication or international communication, mobile communication circuits, and satellite circuits. After use of an ID number has been validated, a telephone set comprised by an information terminal device 40 is used to telephone a prescribed access point, and by inputting an ID number and the telephone number of the other party, an international telephone call can be made. This fee is subtracted from the payment amount area equivalent to the ID number of the settlement authentication device. As information terminal devices 40, computers, game equipment, and other communication terminals which can be used on the Internet or other networks, can be employed.

In the above configuration, processing is actually performed by the following procedure. When a user, having

acquired the above media 10, attempts to receive services introduced in the pamphlet or similar, the user visits a convenience store or other store specified in advance by the service provider company. At this time the user, possessing the media 10, pays to the store the payment amount printed on the media 10. On receiving this payment, the store reads the barcode using a POS terminal device 20, as described above. The information thus read is transmitted, via public circuits or other networks, to the settlement authentication device 30. At this time, if a payment amount is also recorded on the media 10, this payment amount is also read and transmitted. In cases where the system is configured such that the payment amount is specified at the time of settlement, a store employee or the user inputs the desired payment amount into the settlement terminal device. This payment amount is associated with the ID number and transmitted.

When information indicating that payment has been made and settlement concluded reaches the settlement authentication device 30, the settlement authentication device 30 executes processing to validate use of the ID number. Various processing to validate ID numbers is conceivable; for example, validation processing may be performed in which the payment amount associated with the ID number is allocated within the settlement authentication device 30, this ID number is initially locked, and when information is transmitted from the settlement terminal device 20, the lock is canceled. Such processing for ID number validation is accompanied by

processing to confirm the ID number and to confirm that payment has been made, and so may be called authentication.

When there is a request for provision of services from an information terminal device 40 operated by a user, the service provider device 35 references the ID number stored in the settlement authentication device and the payment (balance) information, and decides whether or not services can be provided. This takes the form of a query by the service provider device to the settlement authentication device for each provision of services. In addition, information relating to validated ID numbers may also be transmitted in advance to the service provider device by the settlement authentication device, in order to confirm that services are provided. When the service provider device judges that services can be provided, services are provided to the information terminal device, and update processing is performed in which an amount of money equivalent to the service amount is subtracted from the balance information stored in the settlement authentication device.

By means of this invention, at the store the user pays a fee equivalent to the amount of money printed in advance on the media, information indicating, at least, the ID number which has been read is provided by the settlement terminal device 20 to the settlement authentication device 30, and when processing to validate use of the ID number is performed by the settlement authentication device 30, the media 10 has merchandise value (an obligation to provide non-gratis

services) as a prepaid card. Stated more precisely, the ID number initially printed on the media has merchandise value (an obligation to provide non-gratis services).

After validation processing (authentication) of the ID number born by this media 10, the user can use this ID number to acquire required information from a service provider device 35. If the user separates the part 10a, equivalent to a memo, from the media 10, uses an information terminal device 40 provided to receive service information from the service provider device 35, and uses the ID number printed on the part 10a equivalent to a memo to operate the information terminal device 40, then the service provider device 35 provides the required service information to the information terminal device 40.

In this way, a fee equivalent to the service ID amount which has received service is subtracted from the amount paid in advance to a store by the user, and the balance is left in the fee management area associated with the ID number in the settlement authentication device 30.

This managing of fee balances is performed within the settlement authentication device 30 in association with ID numbers. When as the result of such balance management in association with ID numbers, it is judged that the balance will be eliminated if a service is provided, the service provider device does not provide the service. Even if provision of a service is possible, if the balance falls below a reference value, the service provider device may be made

such that a warning is provided to the information terminal device.

Fig. 2 shows an example in which separate businesses maintain the settlement authentication device 30 and service provider device 35. For example, a business which sells content over the Internet (service provider company) maintains a service provision device 35, and a business performing settlement authentication maintains a settlement authentication device 30. When a user pays a prescribed amount of money at a settlement terminal device 20 (arrow 1), payment information is transmitted from the settlement terminal device 20 to the settlement authentication device 30 (arrow 2). By this means, ID number validation processing is performed. At the information terminal device 40, when the user attempts to purchase content from the service provider and selects ID number settlement, a selection request is sent from the information terminal device 40 to the service provision device 35 (arrow 3), and simultaneously the user inputs an ID number to the settlement authentication device 30 (arrow 5). The service provision device 35 transmits the details of the user request and other information to the settlement authentication device 30, and the settlement authentication device 30 makes a comprehensive judgment concerning the ID number, balance information and request details, and notifies the service provision device 35 as to whether permission to purchase is possible (arrow 6). If there is notification of permission,

the service provider 35 provides the content to the information terminal device 40 (arrow 7).

If the balance is zero or has been reduced, the user can increase the balance by depositing an amount of money equivalent to a payment amount at the store. This is what is called an "electronic wallet" function; funds paid by the user can be used in electronic settlements for various purposes. If the service provider is a financial institution, services of the financial institution can be received via the settlement terminal devices 20 and information terminal devices 40.

As shown in Fig. 3, if the service provider company 35 is a financial institution, it is possible to process what is called "home banking" in which the user sends money and performs similar transactions at an information terminal device 40; deposit and withdrawal of funds at the financial institution gateway is possible at a settlement terminal device 20. Here, if an authentication service company which maintains a settlement authentication device 30 is provided separately from the financial institution as the service provider company 35, the burden on the financial institution itself can be alleviated. When a user makes a deposit at a settlement terminal, the ID number and deposit amount are transmitted to the settlement authentication device 30 via the settlement terminal 20. On the other hand, if funds maintained within the user's "electronic wallet" are transferred to a third party using an information terminal device 40 or similar processing is performed, the details of this processing and ID

number are transmitted to the settlement authentication device 30 and service provider 35, and if the ID number is genuine and the balance is sufficient, processing for fund transfer and deduction of a handling charge is performed by the service provider. When a user attempts to withdraw funds which have been deposited, withdrawal processing is performed at an information terminal device 40 or settlement terminal device 20, and the cash is received at a convenience store or similar, or a postal money order is received at home.

By thus converting into electronic form the point-of-access operations of a financial institution, it is possible to eliminate the storefronts of the financial institution.

In Fig. 4, when a service provider company 35 is an Internet mall consisting of a plurality of stores a, b, ..., h, by providing one authentication service company having a settlement authentication device 30 for this Internet mall, the burden on each of the stores is alleviated, and sales activities can be made more efficient. A user enjoys shopping in the Internet mall at an information terminal device 40, and purchases merchandise at one store or at a plurality of stores. Settlement is performed at a settlement terminal device 20, and after authenticating settlement, the settlement authentication device 30 notifies the relevant store or stores of the results.

The system may also be configured to enable users to transfer and add funds through settlement of media bearing a new ID number. For example, if a payment amount is supposed to

be 3,000 yen, after validation of use of the ID number, usage may result in a balance of zero or an extremely small amount, in which case the user visits a store bringing new media. At the store, a settlement terminal device 20 is used to read the barcode. A payment amount is allocated to the new ID number, and usage of the new ID number is validated. At this time, the user has both the previously used ID number and a new ID number which can be used. In order to use only the old ID number, the user contacts the service provider company and requests addition of the amount of money paid for the new ID number to the old ID number. By having the settlement authentication device maintain information unique to the user, this addition processing can be made automatic. That is, the settlement authentication device is configured such that when a plurality of ID numbers are provided to the same user, transfer and addition processing are executed. In this case both the old ID number and the new ID number are validated; the system may be configured such that, and if either ID number is specified, services can be provided within the limits of the sum of the balances of both ID numbers. When a new ID number is issued, processing may also be performed to delete or otherwise render invalid the old ID number, and to transfer any balance associated with the old ID number to the new ID number. Such processing can easily be executed by the service provider company through software operations within the settlement authentication device. After such addition processing has been performed, the balance paid for the old ID

number and the amount paid for the new ID number are added, and the user can use the old ID number to receive services equivalent to the sum of the paid amounts.

As a rule, a unique ID number is assigned to each media unit, and a plurality of media units do not have the same ID number. By this means it is possible to simultaneously modify the system of ID numbers as appropriate, as effective for prevention of misrepresentation and other security concerns.

By preparing media as a plurality of sheets in bound or strip form, and appending a sequence number to the ID number of the plurality of media units, the user can use a settlement terminal device 20 in a store to make payment for media with the same ID number but different sequence numbers, in order to add settlement amounts to the same ID number in the settlement authentication device.

In this way, the system is configured such that, when the balance for media used in this invention is exhausted, or becomes small, it can be again "recharged" to enable use, so that the media can also be called a "rechargeable prepaid card."

Second Embodiment

A second embodiment of this invention concerns a configuration enabling requests for provision of services to a plurality of service provider companies using a single media unit.

Fig. 5 is a block diagram of the configuration of this second embodiment. The system shown in Fig. 5 is essentially similar to the configuration of the above first embodiment, but differs in the interpositioning, between stores having settlement terminal devices 20 and the service provider company having a settlement authentication device 30 and service provision device 35, of a service management company having a settlement management device 50.

The settlement management device 50 is interpositioned between the settlement terminal device and a plurality of service provider companies. That is, the settlement management device 50 is configured such that, when an ID number is transmitted from a settlement terminal device 20, the settlement management device 50 can reference the service specification information transmitted together with the ID number, the service provider companies a, b, c, ..., h providing the specified services can be identified, and the ID number and payment amount can be transmitted to the settlement authentication devices of the service provider companies. The service management device 50 may be provided independently to enable transmission of information to all service provider companies; or, settlement authentication devices 30a, 30b, ..., 30h may be grouped within the service management company and installed together with the settlement management device 50.

Information read from media 10 by a settlement terminal device 20 differs from the case of the system shown in Fig. 1 in that service specification information, which is data

specifying types of services, must be included. That is, because a plurality of service provider companies exists, it is necessary to select the service provider company from which services are to be received. In addition to thus univocally determining a service provider company for each media unit and printing service specification information specifying the service provider company on the media, the system may also be configured to enable specification of the service by the user at a store. In this case, service specification information is not printed in advance on the media, and the system is configured such that service specification information identifying a service provider company specified by the user is input into a settlement terminal device. Service specification information is sent together with the ID number to the settlement management device 50.

Next, processing in this embodiment is explained.

First, the user acquires the media 10 placed in advertisements included in magazines, in promotional literature which is posted or passed out, or in convenience stores, or else transmits online slips or other media via telephone or wireless circuits. At a settlement terminal device (POS register) 20, 22, 24, 26 in a convenience store, funds in the amount printed in advance on the media are paid. On passing through the settlement terminal device (POS register) 20, the ID number printed on the media 10 is transmitted to the settlement management device 50 via a public circuit or other network. All information from the

settlement terminal device 20 is sent to the settlement management device 50.

At the settlement management device 50, authentication of the opening of the ID number is performed. The settlement management device 50 assigns and transmits information to the service provider company, based on data identifying the type of service. For example, if there are a plurality of service provider companies which provide international telephone communication services, and settlement authentication devices 30a, 30b, ..., 30h and service provision devices 35a, 35b, ..., 35h are installed at each service provider company, information identifying the service provider company is recorded as a barcode on the media 10. A settlement terminal device 20 reads this information together with the ID number, and sends it together to the settlement management device 50. The settlement management device 50 collects information for each service provider company, for selection and transmission to the settlement authentication devices 30a, 30b, ..., 30h possessed by individual service provider companies. At the settlement authentication devices 30, opening of the transmitted ID number is authenticated.

When receiving services, a user uses an information terminal device 40 to access service provision devices 35a, 35b, ..., 35h through the access points, determined in advance, of service provision devices 35a, 35b, ..., 35h. When telephonic communication begins, responsive guidance is provided from the service provision device or settlement

authentication device, and the user follows this guidance to input an ID number. The settlement authentication devices 30a, 30b, ..., 30h confirm that the ID number matches an ID number registered in advance with settlement authentication devices 30a, 30b, ..., 30h. If there is no match, service is not provided. The settlement authentication device also confirms that a balance remains; if a balance remains, telephonic communication is permitted. If the balance is insufficient, service is not provided. When provision of service is permitted, the user dials the telephone number of the other party and converses by telephone. When the telephone conversation ends, the settlement authentication devices 30a, 30b, ..., 30h subtract the number of minutes of telephone conversation used from the service amount. During telephone conversation also, the settlement authentication devices 30a, 30b, ..., 30h manage the amount of service remaining to the user and the provision of service; if the amount remaining reaches an amount determined in advance, a warning is provided to the information terminal device, through information to the effect that "The balance remaining is low." When the balance reaches zero, the service provision device terminates the provision of service.

Next, the flow of monetary settlement and the details of transmitted information are explained. Fig. 6 is a diagram of interrelations for transactions in a settlement system of the second embodiment of this invention.

A store such as a convenience store performing settlement of media (place of payment) advertises to users (customers) through storefront fliers, in-store fliers and other advertising means, in order to promote the use of this system (S1). Service management companies performing service management for this system also advertise to users, employing storefront fliers and sales promotion activities in magazines, newspapers, television, radio and other media, on streets, at event venues, and similar (S2). The service provider companies which provide services themselves conduct advertising activities as well, through storefront fliers and sales promotion activities in magazines, newspapers, television, radio and other media, on streets, at event venues, and similar (S3). Users acquire media created in this way (S4). Users bring acquired media into stores, and in the store pay an amount to settle the amount of payment (payment: S5). The store reports the sale to the service management company and service provider company (sales report: S6, S7). Based on this report, the service provider company releases the ID number in order to provide service to the user, that is, executes processing to validate use of the ID number (validation processing: S8). And, when there is a request from the user for provision of service, if the conditions for service provision are satisfied, service is provided (S9). The service provider company and service management company adjust and manage the service ID amount and payment amount according to the details of the user's ID number (management: S10). The

store remits the funds paid to the service management company, and the service management company remits these to the service provider company (payment: S11, S12).

In some cases, the balance of prepaid service utilization fees is reduced, and the user may, through settlement for new media, add a new purchase amount to the user's ID number (new purchase: S13).

The service utilization ID number settlement system is operated by passing through the processes shown in this diagram of transaction interrelations.

Fig. 7 shows the details of transmitted information in the transactions of Fig. 6. At the stage in which a store, service management company and service provider company advertise to users, the media is recorded with the service management company name, service provider company name, service product name, payment amount, date of expiration, ID number, and other information. Information items can be added or removed as necessary. When the amount paid can be settled at a store, recording of the amount paid is unnecessary. When the service provider company can be determined at a store, printing of the service provider company and service product is unnecessary.

When a store makes a sales report to a service management company and service provider company, in addition to the above information, the name of the store receiving the funds settled for the media, and the date and time of payment, are also appended and transmitted. Management of services between the

user and the service management company and service provider company is entirely performed based on ID numbers and service balances. When payment is made by a store to the service management company and service provider company, ID numbers, the name of the store receiving payments, payment dates and times, and payment amounts are transmitted.

This information is normally read by scanning of barcodes or similar, and is configured as digital information which can be transmitted over circuits. It is preferable that the service management company name, service provider company name, service product name, amount paid, date of expiration, and ID number be rendered as barcodes and read, in which case rendering as barcodes is based on a prescribed format. Cases in which the service management company name, service provider company name, service product name, or other items are identical are also possible.

As a variation on this embodiment, a configuration in which sub-IDs are issued by the settlement authentication device is also possible. In this case, the settlement terminal devices 20 read the ID number recorded on the media 10, and associate and transmit the ID number and balance information without specifying the service. On the other hand, when there is a request for service together with a specific ID number from an information terminal device 40, the settlement authentication device 30 at the service provider company determines whether the specific ID number is in the sub-ID numbers stored therein, and if no such number exists, queries

the settlement management device 50. If this specific ID number is not registered as its own sub-ID number but is an ID number validated in the settlement management device, the settlement authentication device 30 generates a new sub-ID number, associates it with the balance information and stores it. If a balance is present, the service is provided. That is, a sub-ID number is issued when the settlement authentication device is first accessed. Subsequently, similar service provision requests of the service provider company are made by the user's presenting the sub-ID number. By means of this variation, there is the advantage that the authentication procedure can be omitted.

As shown in Fig. 11, it is also possible to issue media which specifies a service in advance, such as for example prepaid cards 10a specifically for music delivery, or prepaid cards 10b specifically for portable telephone use (specific telephone company). In this case, the ID number is itself associated with a specific service, and the user need not perform any operations to specify a service.

Third Embodiment

A third embodiment of this invention concerns a settlement system wherein, in the above second embodiment, a plurality of service provider companies can be specified at a store.

The configuration in this embodiment is similar to that of the above second embodiment, explained in Fig. 5. However,

the settlement terminal device 20 is configured such that, at the time of media settlement, in addition to reading the ID number recorded on the media, one or more service provider companies a, b, c, ..., h can be specified. At this time, separate amounts of money to be allocated to each of the service provider companies from the amount paid can be specified at the settlement terminal device. Specification of these service provider companies and specification of the individual amounts of money are performed either by the user's conveying orally to a store employee the services to be specified and the employee's entering the information via a keyboard into the settlement terminal device, or by the reading of barcodes of a list of service provider companies prepared in advance and barcodes of a list of amounts paid. The settlement terminal device may also be configured to enable a user to input this information directly, by panel or button operations. The settlement terminal device 20 issues a sub-ID number for each specified service provider company. These sub-ID numbers may be sequence numbers assigned in relation to the original ID number, or may be completely separate numbers. Data identifying the specified service provider companies is transmitted to the corresponding service management company, together with allocated payment amounts and sub-ID numbers.

When information is transmitted from a settlement terminal device, the settlement management device 50 references the service specification information transmitted

together with the sub-ID number. Service provider companies specified by the service specification information are identified, and individual balance information associated with service specification information and sub-ID number are transmitted to settlement authentication device for the service provider company. If there is no hindrance to operation, the system may also be configured such that sub-ID numbers are not generated, and the same ID number is used for every service provider company.

Processing at the settlement authentication device and service provision device of a service provider company to which sub-ID numbers and other information have been transmitted is similar to that of the above first embodiment.

By means of the above third embodiment, a plurality of service provider companies, providing services can participate jointly in this settlement system. At each service provider company, when an ID number has been sent, services can be provided within the limits of funds allocated to each.

For the user, it is possible to freely specify a plurality of services in a single media settlement, for greater ease in using this settlement system. And the user can freely set allocation amounts according to the frequency of use of services, and can therefore appropriately receive services desired within the limits of the amount of money paid.

Fourth Embodiment

A fourth embodiment of this invention concerns a settlement system which enables selection of services after media settlement.

Fig. 8 is a block diagram of the configuration of the fourth embodiment. The system shown in Fig. 8 is essentially similar to the configuration of the above second embodiment shown in Fig. 6, but differs in that, in the service management company, the settlement management device 50 comprises a service specification device 70. Processing within the settlement terminal devices 20, and within the settlement authentication devices 30 and service provision devices 35 at service provider companies, are similar to processing in the above first embodiment.

When, in this embodiment, settlement is performed using a settlement terminal device 20, the user performs settlement without specifying a service. A settlement amount may be recorded in advance on the media, or the system may be configured to enable the user to specify the amount at a store. After settlement by a user for media 10, the service management company is contacted, and the service selection device 70 is used to specify services and to specify fund amounts.

When a service selection device 70 is connected from an information terminal device 40 operated by a user, in addition to presentation of an ID number, receipt of service specifications (one or more) is also possible; it is also configured to enable transmission of service specification

information, identifying services specified by the user, together with individual balance information allocated to each service. Here it is possible to select the amount of money to be allocated to each specified service.

When an ID number is transmitted from a settlement terminal device 20, and moreover service specification information and individually specified balance information are transmitted from a service selection device 70, the settlement management device 50 generates a sub-ID number for each service. The settlement management device 50 is further configured to enable transmission, to the settlement authentication devices 30 of service provider companies specified by the service specification information, individual balance information and the sub-ID number corresponding to the service specification information.

Each of the service provider companies a, b, c, ..., h executes processing conforming to the above embodiment based on the sub-ID number. However, in cases where no hindrance arises from use of the same ID number, the same ID number may be used by each service supply company.

The settlement system of this embodiment can be applied to ticket purchase and reservation deposit settlement systems for utilization of concert, hotel, air travel, and other services. Fig. 9 is a block diagram of such a settlement system. In this processing, the settlement management device 50 is supposed to be configured so as to include the settlement authentication device 30.

First, the user pays the amount of money (paid amount) printed in advance on the media 10 from the settlement terminal 20 of a convenience store. On passing through the settlement terminal device (POS register) 20, the ID number printed on the media 10 is transmitted to the settlement management device 50 via a public circuit or other network. At the settlement management device 50, processing is performed as a settlement authentication device, and opening of an ID number is authenticated.

Next, the user designates to the settlement management device 50 a service provider company, by telephone or over the Internet, the ID number printed on the media is input, and a settlement number is received. On the day of use, the user brings to the service company gateway the media 11 on which the settlement number is recorded and registered, and receives service. The media 11 with settlement number recorded and registered can also be acquired via mail or as an online slip; it can also be acquired and presented as a floppy disk, portable terminal ID, IC card, or other digital media. In this case, the digital media is read at the service provider company gateway, entailing the installation of a device able to recognize settlement numbers.

To explain Fig. 9 in further detail, the user first pays a prescribed amount of money at the settlement terminal device 20, and the ID number of the media 10 is validated. When a reservation is made with a hotel (of the service provider devices 35a, 35b, ..., 35h, for example, 35a) from an

information terminal device 40, the settlement authentication device 30a judges whether the reservation is accepted or not, and the service provision device 35a is notified of the judgment result. At this time, the service provision device 35a notifies the information terminal device 40 of a settlement number 11. If reservations are made with a plurality of hotels, the user acquires a settlement number for each hotel.

On the day of lodging, the user brings the media to the front desk of the hotel, and informs the hotel of the settlement number received for that hotel. At the time of reckoning, a service amount equivalent to the service received by the customer is subtracted from the amount already settled, to adjust accounts. If the adjusted amount is smaller than expected, and a payment amount remains for the media, the media is carried over to the next hotel reservation, or a refund is provided on the spot. If the adjusted amount exceeds the paid amount for the media, the user pays the difference.

A settlement method similar to the procedure explained above can of course also be applied to the payment of fees for the purchase of airline tickets and of tickets for entertainment, events, concerts and similar.

Working Examples

Fig. 10 is a drawing showing an example of a settlement system according to the above second embodiment, together with the system flow of processing. In this example, a settlement

terminal management device 60 is newly provided for batch management of information from settlement terminal devices 20; this management device 60 is installed in the headquarters of a convenience store chain when the stores are convenience stores. In essence, it is the same as the system in Fig. 6.

First, a service provider company having a service provision device 30 issues media 10 attached to pamphlets in order to encourage use of the service (step 101). This media 10 is issued and distributed by the service management company having the service management device 50 in addition to the service provider company (step 102). On acquiring this media 10, a user pays a fee at a store in which a settlement terminal device 20 is installed (step 103). The real payment information read by POS 22, 24, 26 is transmitted via a public network 70 to a service provider company having a settlement authentication device 30 and to a service management company (steps 104a, 104b). Based on this real payment information, the settlement authentication device 30 executes processing to validate usage of the card (step 105). When an additional amount of money is subsequently paid, processing to increase the balance is also performed within the settlement authentication device 30, based on real payment information from a settlement terminal device 20. Such processing to increase balances and update ID numbers can also be performed via a service management company having a settlement management device 50. Communication between stores and the store headquarters (S106a, S106b), communication between the

store headquarters and the service management company (S107a), and communication between the service management company and a service provider company (S107b), are bidirectional communications via a public network 70.

Fig. 12 shows an example of a printed slip used as the media 10. The printed slip 10 may, for example, be mailed as a result of a request at an Internet web site. This slip 10 displays an ID number; when a prescribed amount of money is paid at a convenience store or similar, the ID number and any other necessary information, as well as the fact that a deposit has been made, are transmitted from the POS terminal to the settlement authentication device 30, and subsequently the ID number is validated.

The slip 10 is provided with an explanatory part 110 on which is printed instructions for use, an ID number part on which are printed the ID number and precautions regarding use of the ID number, and a slip part 130. Similarly to an ordinary bank fund transfer slip, the slip part 130 comprises a slip part for submission to headquarters 140, a slip part for store use 150, and a receipt part 160; on the slip part for submission to headquarters 140 are printed the store number, date of expiration and other necessary information by means of the barcodes 140A, 140B, 140C, 140D. At the settlement terminal device 20, these barcodes are read and settlement processing performed. On the slip part for submission to headquarters 140 are provided a user space 142 for identification of the user, an amount space 144 displaying

the amount of money paid, a recipient space 146 indicating the recipient, and a stamp space 148 in which the date of receipt is stamped. The slip part for store use 150 is provided with an amount space 152 showing the amount of money paid, a user space 154 identifying the user, a recipient space 156 indicating the recipient, and a stamp space 158 in which the date of receipt is stamped. The receipt part 160 is provided with a user space 162 identifying the user, a recipient space 164 indicating the recipient, an amount space 166 indicating the amount of money paid, and a stamp space 168 in which the date of receipt is stamped.

Fig. 13 shows a variation on the slip of Fig. 10. This slip 10 is provided with two slip parts 132, 134 in a single sheet; the ID number part 120 displays two ID numbers corresponding to the slip parts 132, 134. In this way, by providing a plurality of slip parts 132, 134 in a single slip sheet, the recipient can perform processing for fund transfer a plurality of times while requiring only one mailing process, and the user can also suitably select the amount of money for transfer.

The slips of Fig. 12 and Fig. 13 are distributed to users through the mail or by other means as printed matter, or can be online slips which are printed from an information terminal device 40. Instead of taking the form of a slip, an ID number displayed on an information terminal device 40 can itself be taken to be the media.

Fig. 14 shows a settlement system which uses an online slip 10 and ID number itself as the media. In this example, the service provider company 35 is a mail-order company. The user accesses an information terminal 40, and via the information terminal 40 selects a product of the mail-order company 35. Next, as the payment method, an online slip or an ID number is selected, and an online slip or ID number is obtained at the information terminal 40. Then the user transmits the ID number, or the ID number of the online slip and other information, to the settlement authentication device 30 as well. Thereafter the user employs the ID number or online slip to settle payment at a settlement terminal device 20. This information is transmitted to the settlement authentication device 30, and after authentication, the mail-order company 35 is notified of the settlement result. Based on this, the mail-order company 35 supplies the product to the user. The product is either supplied directly from the mail-order company 35 via a physical distribution company, or else transfers the product to the user at a convenience store or similar having a settlement terminal device 20.

In each of the above embodiments, there is a demarcation into settlement terminal device, service management device, service selection device, settlement authentication device, and service provision device; but there is no need whatsoever for such separation, and it is sufficient that, from the standpoint of function, the operations of each of these devices are effected. That is, one or more of these devices

may be realized in the same device; these devices may be further divided into more functionally specific devices; and devices other than these, organized to provide comparable functions, may be used.

INDUSTRIAL APPLICABILITY

This invention concerns a settlement system employing a prepaid method in which an ID number becomes valid at the time of settlement of product payment and the right to receive services ensues; it can be used in service systems to provide a variety of services, such as international telephone and other communication services, product sales using the Internet, sale of non-gratis content over the Internet, information services from Internet service providers, audio information services, remittance of membership fees, and sale of event tickets and airline tickets.

CLAIMS

1. A service utilization ID number settlement system for the provision of services based on an amount of money paid in advance by a user, and comprising:

a settlement terminal device, configured so as to read an ID number recorded on the media at the time of settlement for prescribed media, to cause the input of balance information equivalent to the amount of money paid in association with the ID number, and to transmit said ID number in association with said balance information; and,

a settlement authentication device, configured to be able to store said balance information in association with said ID number when the ID number has been transmitted; to judge whether service can be provided, referencing said ID number and balance information, when there is a request for service from an information terminal device operated by a user; and, when it is judged that service can be provided, to permit provision of service to said information terminal device, and to subtract from the balance information an amount of money equivalent to the service amount.

2. A service utilization ID number settlement system for the provision of services based on an amount of money paid in advance by a user, and comprising:

a settlement terminal device, configured so as to read, at the time of settlement for prescribed media, an ID number

recorded on the media, to cause the input of balance information equivalent to the amount of money paid and service specification information specifying a service in association with the ID number, and to transmit said ID number in association with said balance information and said service specification information;

a settlement management device, configured so as to reference said service specification information when an ID number is transmitted from said settlement terminal device, and to transmit the ID number and balance information to a settlement authentication device associated with the service specified by the service specification information; and,

one or more settlement authentication devices, configured so as to store ID numbers transmitted from said settlement management device in association with said balance information; when there is a request for service from an information terminal device operated by a user, to judge whether service can be provided, referring to said ID number and balance information; and, when it is judged that service can be provided, to permit provision of service to said information terminal device, and to subtract from the balance information an amount of money equivalent to the service amount.

3. The service utilization ID number settlement system according to claim 2, wherein:

said settlement terminal device reads, at the time of settlement for the media, the ID number recorded on said media, causes the input of service specification information specifying one or more service and individual balance information equivalent to amounts of money allocated to each service specified from the paid amount, and transmits to said settlement management device the ID number in association with said service specification information and said individual balance information;

when an ID number is transmitted from said settlement terminal device, said settlement management device references the service specification information transmitted together with the ID number, and transmits, to each settlement authentication device associated with the one or more services specified by the service specification information, the ID number and individual balance information associated with the service specification information; and,

each of said settlement authentication devices is configured to be able to store an ID number transmitted from said settlement management device in association with said individual balance information.

4. A service utilization ID number settlement system for the provision of services based on an amount of money paid in advance by a user, and comprising:

a settlement terminal device, configured so as to read, at the time of settlement for prescribed media, an ID number

recorded on the media, to cause the input of balance information equivalent to the amount of money paid in association with the ID number, and to transmit said ID number in association with said balance information;

a settlement management device, configured such that, when an ID number and balance information are transmitted from said settlement terminal device, the settlement management device validates the ID number and stores the ID number in association with the balance information, and, when there is a query from any settlement authentication device as to whether a specific ID number is validated, the settlement management device judges as to whether said ID number is validated, and transmits the result together with the associated balance information; and,

one or more settlement authentication devices, configured so as to store sub-ID numbers in association with balance information; to judge, when there is a request for service together with a specific ID number from an information terminal device operated by a user, as to whether service can be provided according to whether the specific ID number matches said sub-ID number or an ID number stored in said settlement management device; and, to generate a new sub-ID number when the specific ID number does not match a sub-ID number.

5. A service utilization ID number settlement system for the provision of services based on an amount of money paid in advance by a user, and comprising:

a settlement terminal device, configured so as to read, at the time of settlement for prescribed media, an ID number recorded on the media, to cause the input of balance information equivalent to the amount of money paid in association with the ID number, and to transmit to said settlement management device said ID number in association with said balance information;

a service selection device, configured so as to receive an ID number as well as service specification from an information terminal device operated by a user, and to transmit service specification information specifying the service together with individual balance information allocated to the service;

a settlement management device, configured such that, when an ID number has been transmitted from said settlement terminal device and in addition thereto said service specification information and individual balance information have been transmitted from said service selection device, the settlement management device transmits individual balance information and the ID number corresponding to service specification information to each of the settlement authentication devices corresponding to the one or more services specified by the service specification information; and,

one or more settlement authentication devices, configured so as to store ID numbers transmitted from said settlement management device in association with said individual balance information; to judge, when there is a request for service from an information terminal device operated by a user, as to whether service can be provided, referring to said ID number and individual balance information; and, when it is judged that service can be provided, to permit provision of service to said information terminal device, and to subtract from said individual balance information an amount of money equivalent to the service amount.

6. A service utilization ID number settlement system for the provision of services based on an amount of money paid in advance by a user, and comprising:

a settlement terminal device, configured so as to read, at the time of settlement for prescribed media associated with said prescribed service, an ID number recorded on the media, to cause the input of balance information equivalent to the amount of money paid in association with the ID number, and to transmit to said settlement management device of said ID number in association with said balance information; and,

a settlement authentication device, configured so as to store said balance information in association with said ID number when the ID number has been transmitted; to judge as to whether service can be provided, referencing said ID number and balance information, when there is a request for service

from an information terminal device operated by a user; and, when it is judged that service can be provided, to permit provision of service to said information terminal device, and to subtract from the balance information of an amount of money equivalent to the service amount.

7. The service utilization ID number settlement system according to claims 1 through 6, wherein, when judging whether said service can be provided, if the ID number has not been validated, or the amount of money equivalent to the service amount to be provided is smaller than the current balance, said settlement authentication device prohibits the provision of the service.

8. The service utilization ID number settlement system according to claim 7, wherein:

said settlement authentication device is configured to store user-specific information identifying the user associated with said ID number;

when a new ID number is issued, the user-specific information associated with the new ID number is referenced, a judgment is made as to whether there exists an ID number already registered for the same user, and if there exists an ID number already registered, the new ID number is associated with the already-registered ID number and stored, and the new ID number is validated; and,

when a judgment is made as to whether said service can be provided, if the amount of money equivalent to the service amount to be provided is larger than the sum of the balance associated with the already-registered ID number and the balance associated with the new ID number, provision of the service is prohibited.

9. The service utilization ID number settlement system according to claim 7, wherein:

said settlement authentication device is configured to store user-specific information identifying the user associated with said ID number; and,

when a new ID number is issued, the user-specific information associated with the new ID number is referenced, a judgment is made as to whether there exists an ID number already registered for the same user, and if there exists an ID number already registered, the balance associated with the already-registered ID number is added to the balance associated with the new ID number, the new ID number is validated, and the balance information associated with the already-registered ID number is deleted.

10. The service utilization ID number settlement system according to claim 9, wherein said media is supplied in the form of a plurality of separable sheets, bearing different ID numbers.

11. The service utilization ID number settlement system according to any one of claims 1 through 10, wherein, when judging whether said service can be provided, if the current balance less the amount of money equivalent to the service amount to be provided is smaller than a reference amount of money, said settlement authentication device causes the transmission of warning information to said information terminal device.

12. The service utilization ID number settlement system according to claim 1, wherein:

said media is a slip on which are recorded said ID number and other information, and which specifies the amount of money to be paid by the user; and,

the settlement terminal device can input the ID number recorded on the slip and other information, and can transmit the input ID number and other information, and the fact that the user has paid said amount of money.

13. The service utilization ID number settlement system according to claim 12, wherein said slip is supplied in the form of a plurality of slips on a single sheet, bearing different ID numbers, and which can be cut away.

14. The service utilization ID number settlement system according to claims 4 or 5, wherein the ID number used in said

settlement authentication device is a sub-ID number generated in association with each service.

15. The service utilization ID number settlement system according to any one of claims 1 through 14, wherein said ID number is different for each of said media units.

16. The service utilization ID number settlement system according to any one of claims 1 through 15, wherein:

the settlement terminal device can transmit user deposit information, and

when said deposit information is received together with an ID number, the settlement authentication device sets the result of addition of the deposit information to the balance information as the new balance information.

17. Media, on which is recorded an ID number, and which can be used in the service utilization ID number settlement system according to claims 1 through 16.

Abstract

A settling system has a medium (10), a settling terminal (20), a settlement authenticating device (30), and a service providing device (35). An ID number is recorded on the medium (10). When the user pays a predetermined amount of money, the settlement authenticating device (20) reads the ID number and notifies the settlement authenticating device (30) of the payment through a network. The settlement authenticating device (30) performs processing for making the use of the ID number effective in response to the notification. Therefore the medium (10) has no commercial value (pay service providing duty) when it is shipped or delivered to the user. The settlement authenticating device (30) holds the ID number and the received amount of money. The service providing device (35) provides an information terminal (40) with service through a network when operation including the input of the ID number is performed through the information terminal (40). The settlement authentication device (30) subtracts the charge corresponding to the ID amount of service from the received amount of money and makes the remainder the balance.

FIG. 1

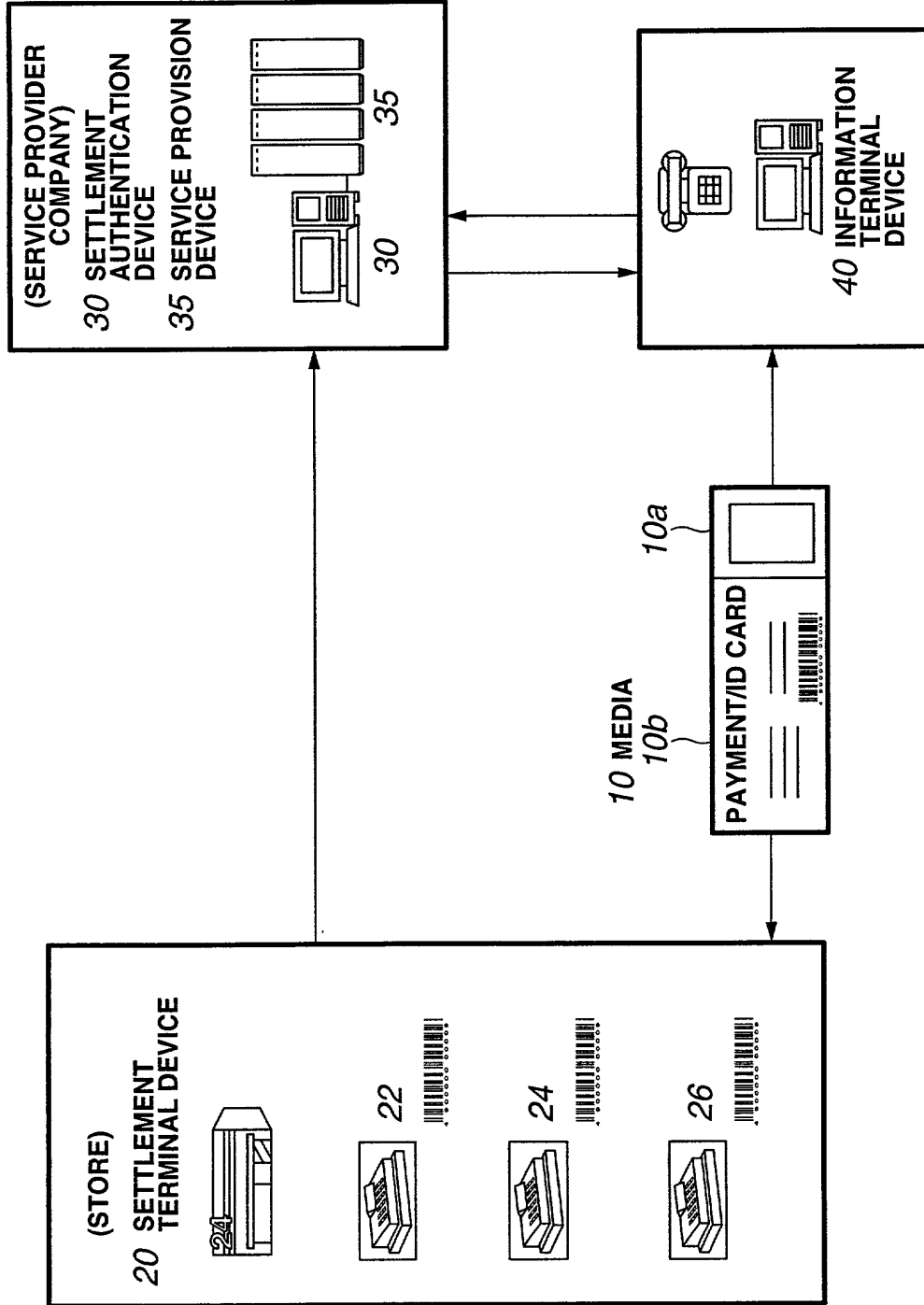


FIG.1

FIG. 2

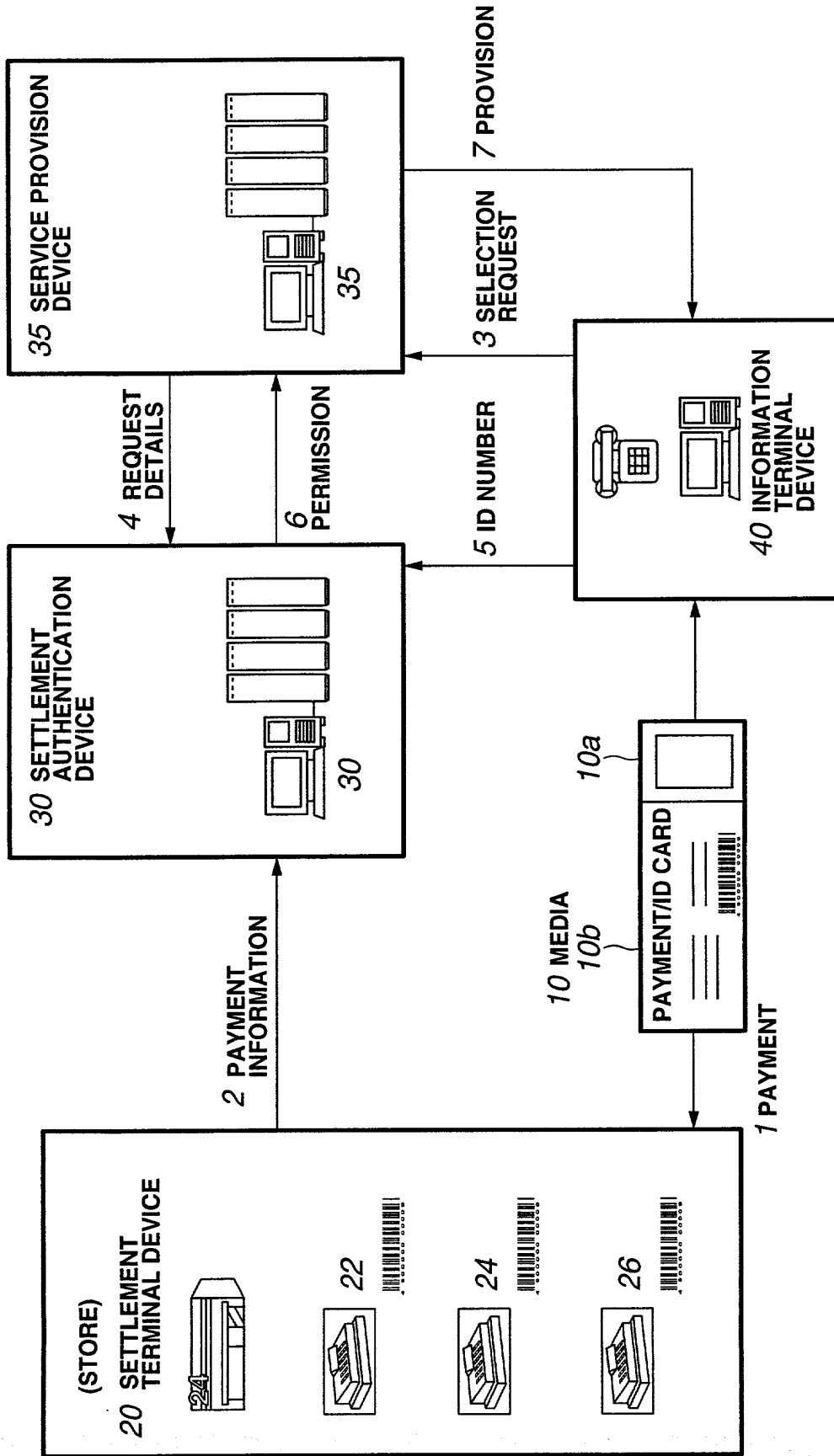


FIG.2

FIG. 3

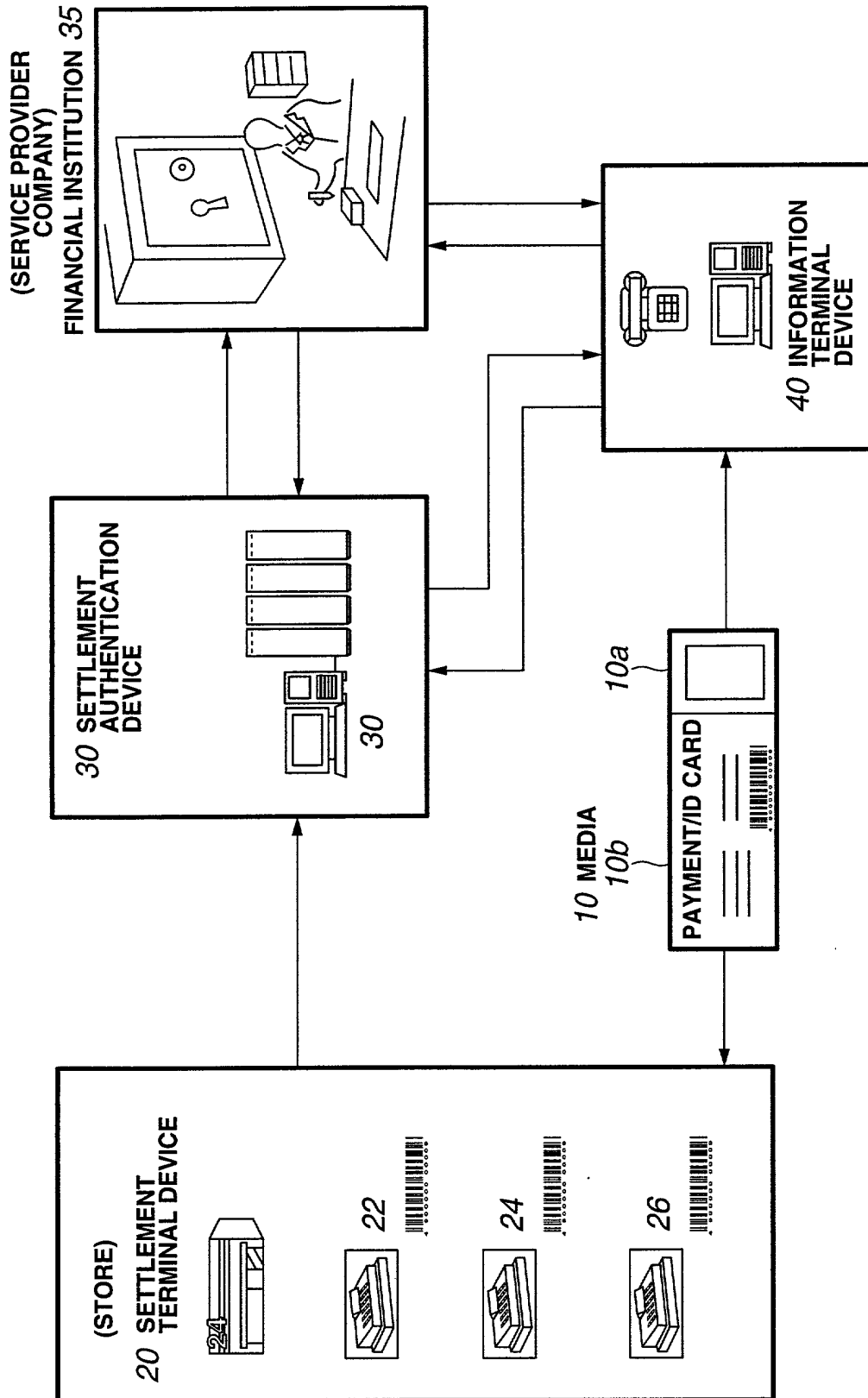


FIG.3

FIG. 4

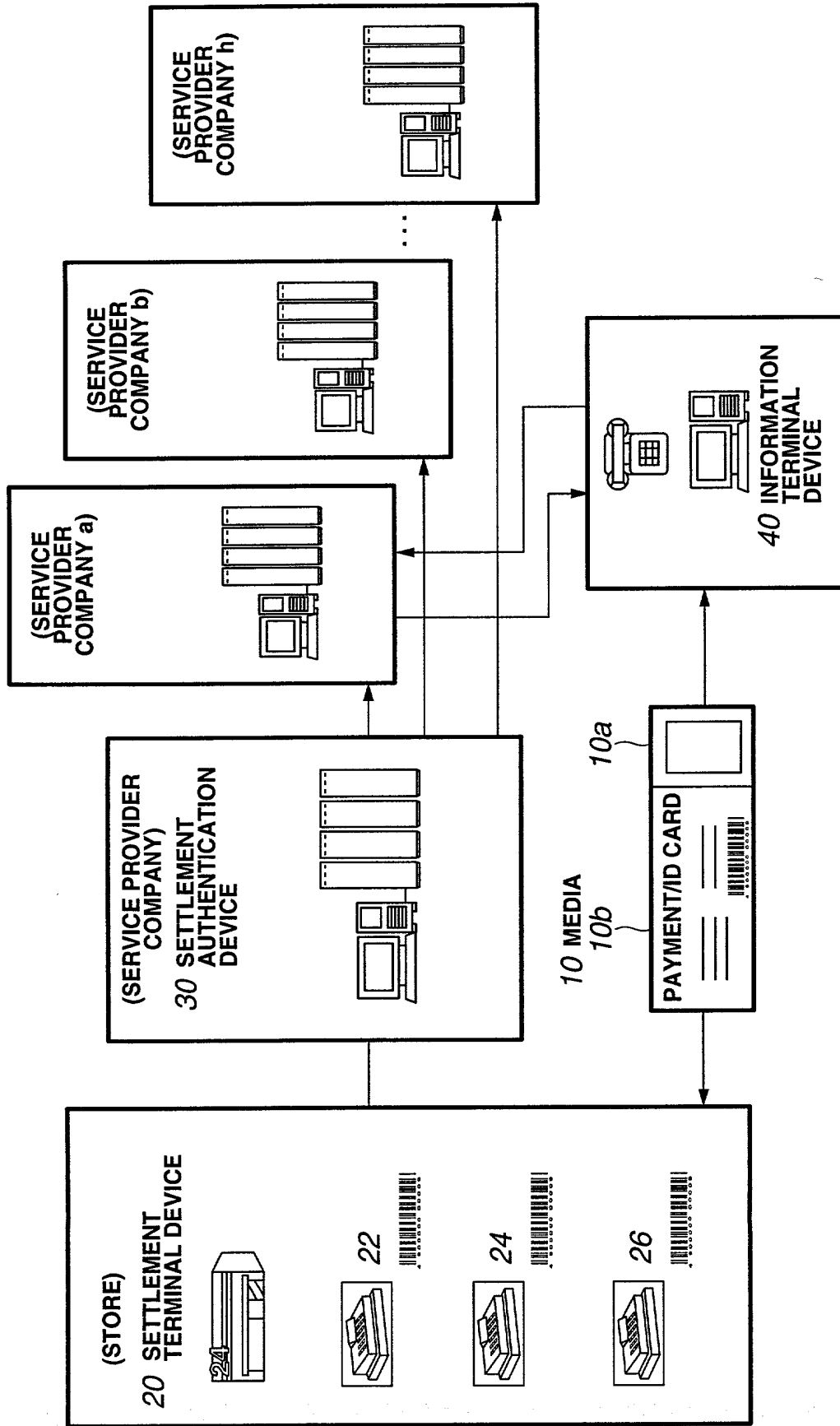


FIG.4

FIG. 5

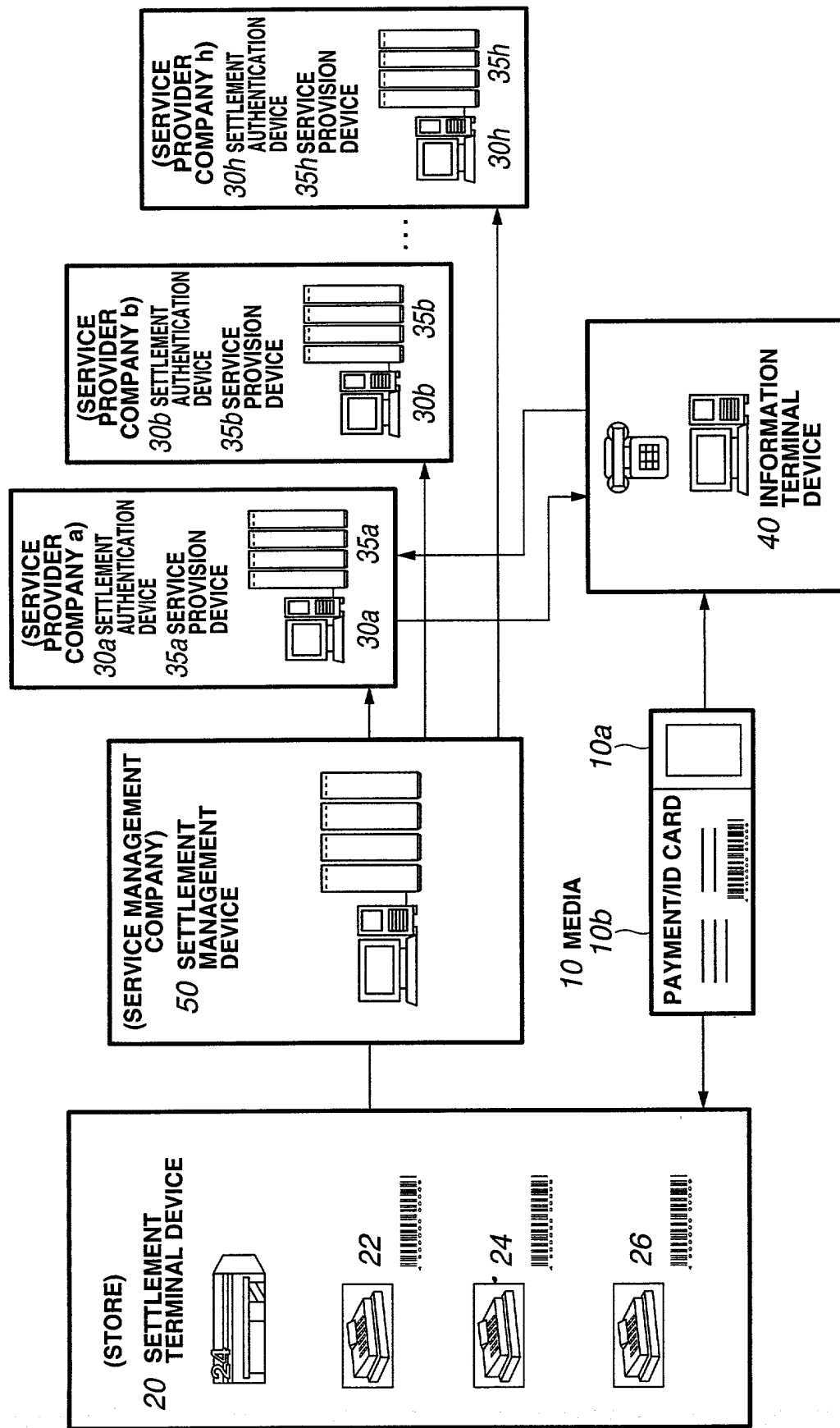


FIG.5

Page 2 of 2

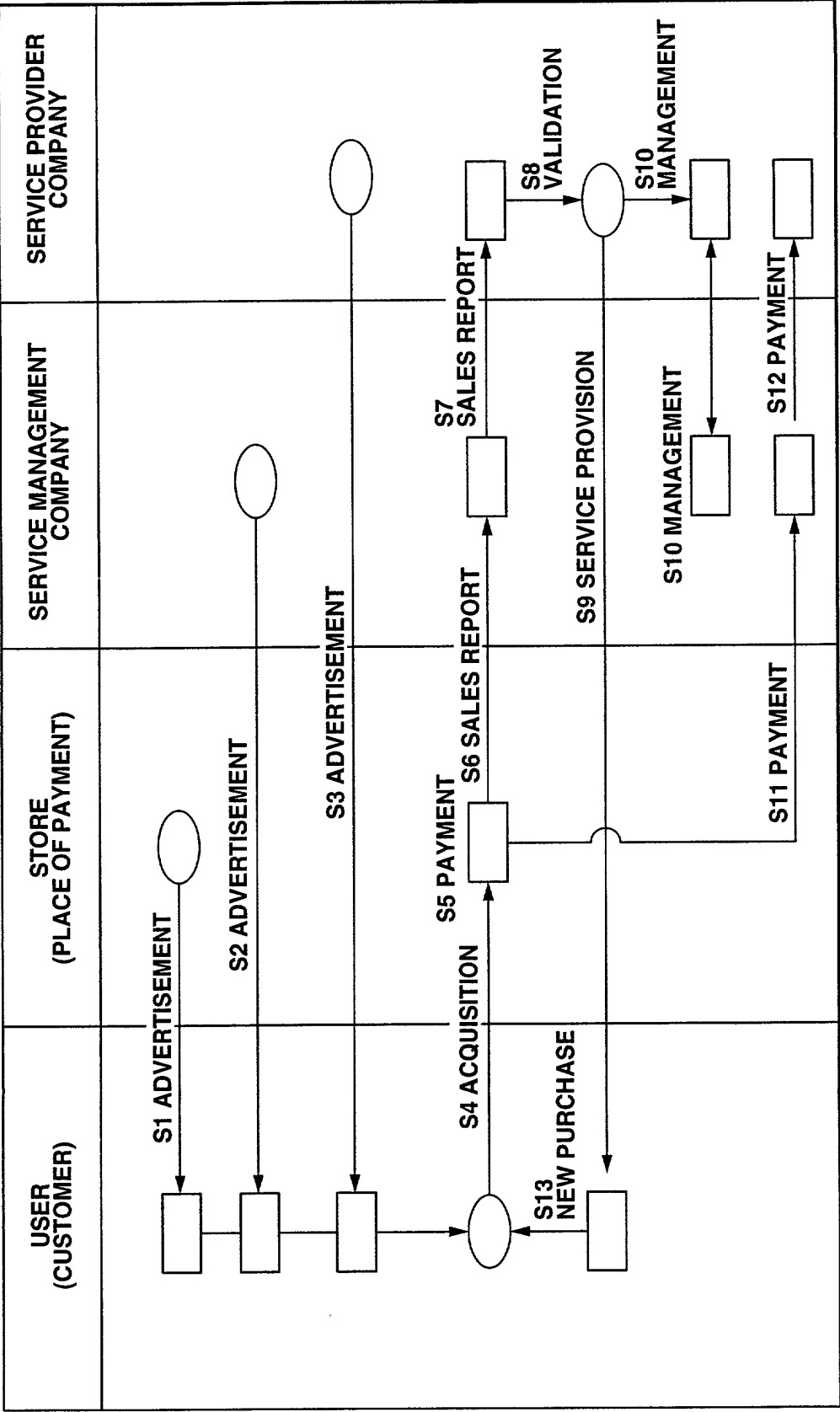


FIG.6

	ID NUMBER									
	(1) SERVICE MANAGEMENT COMPANY	(2) SERVICE SUPPLIER COMPANY NAME	(3) SERVICE PRODUCT NAME	(4) AMOUNT OF MONEY PAID	(5) DATE OF EXPIRATION	(6) ID NUMBER	(7) NAME OF STORE WHERE PAID	(8) DATE AND TIME OF PAYMENT	(9) SERVICE BALANCE	(10) PAYMENT BALANCE
ADVERTISEMENTS (S1 TO S3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TIME OF SETTLEMENT (S4, S5, S13)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
SALES REPORT (S6, S7)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
SERVICE PROVISION (S9)						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
MANAGEMENT (S10)						<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
PAYMENT (S11, S12)						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

FIG.7

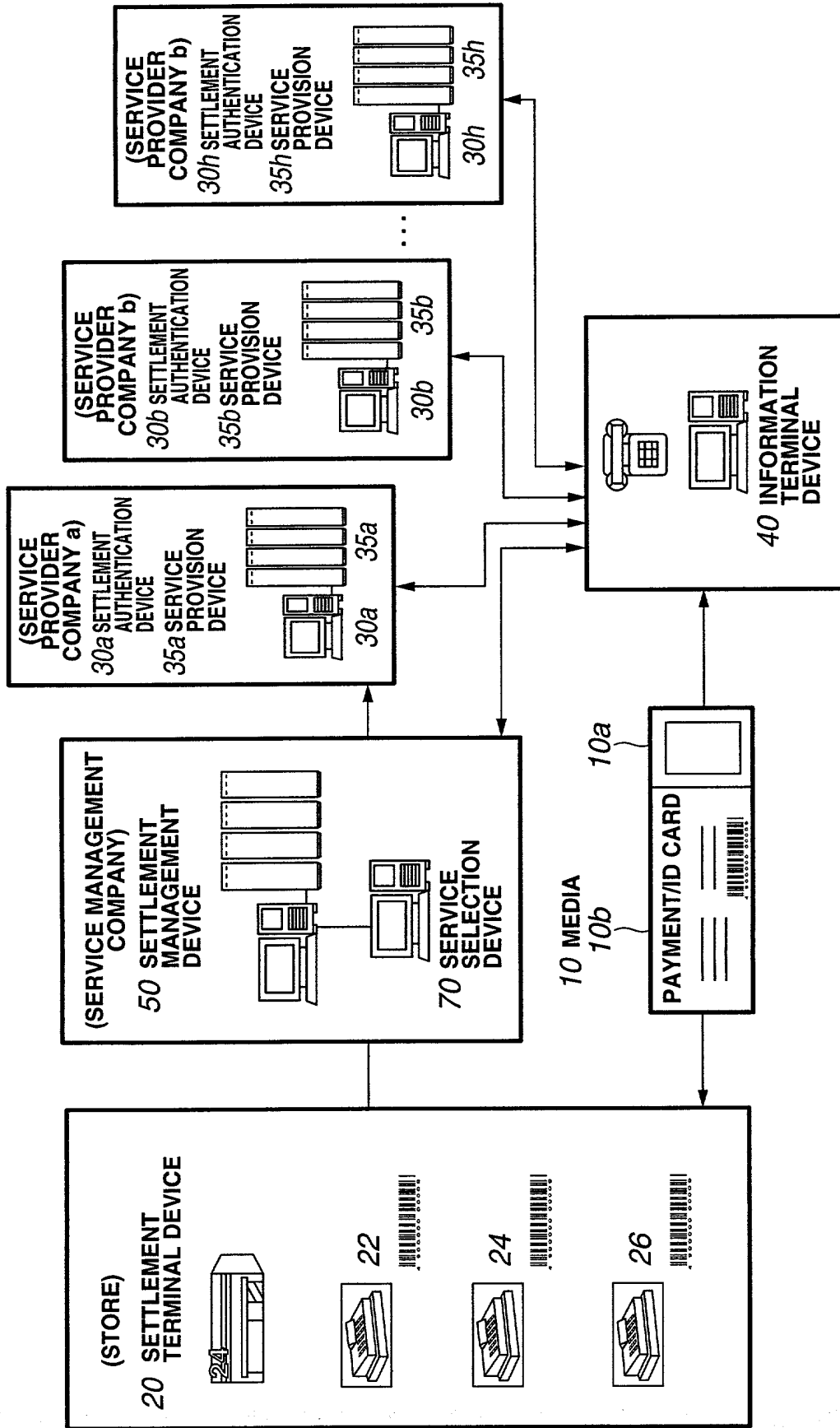


FIG.8

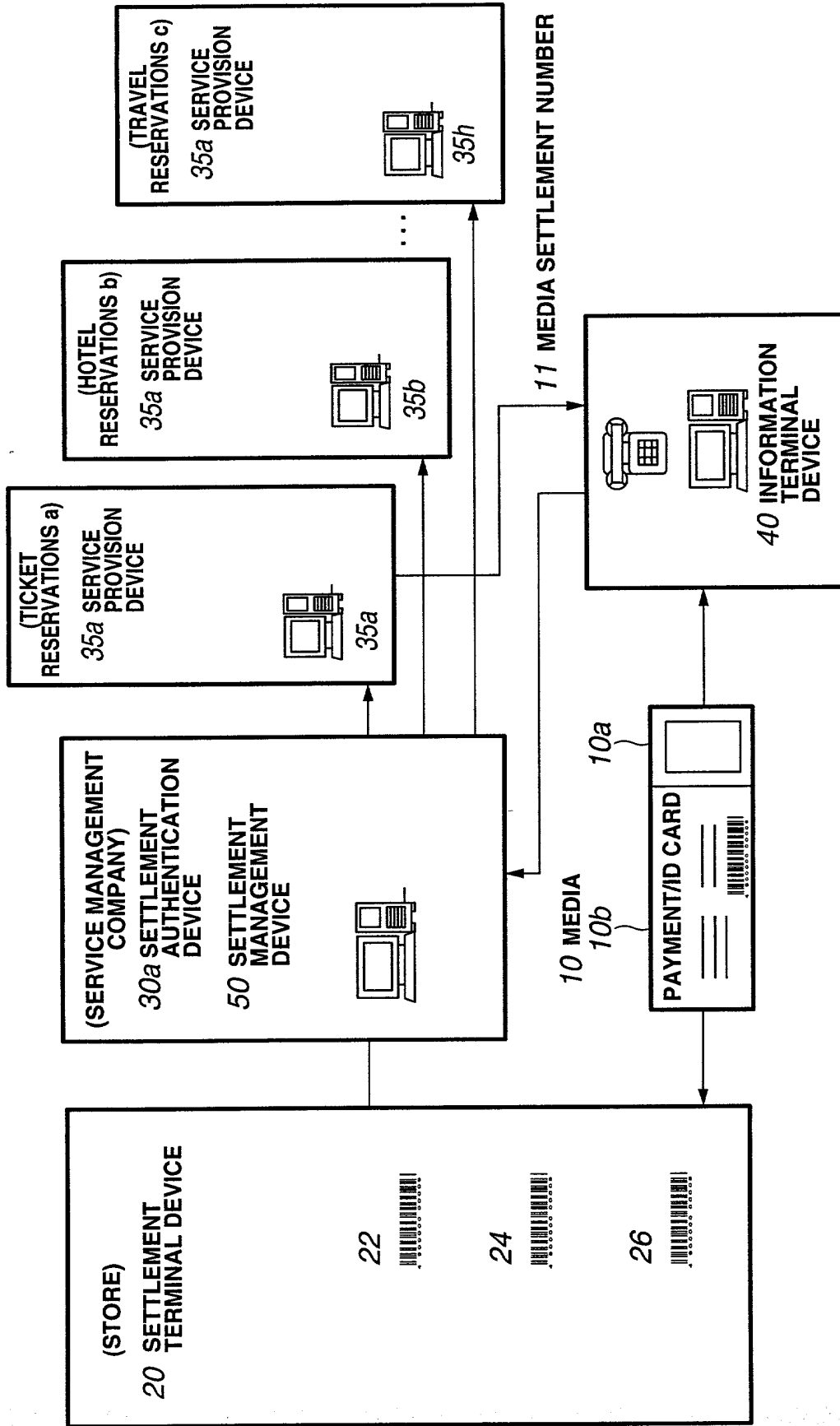


FIG. 9

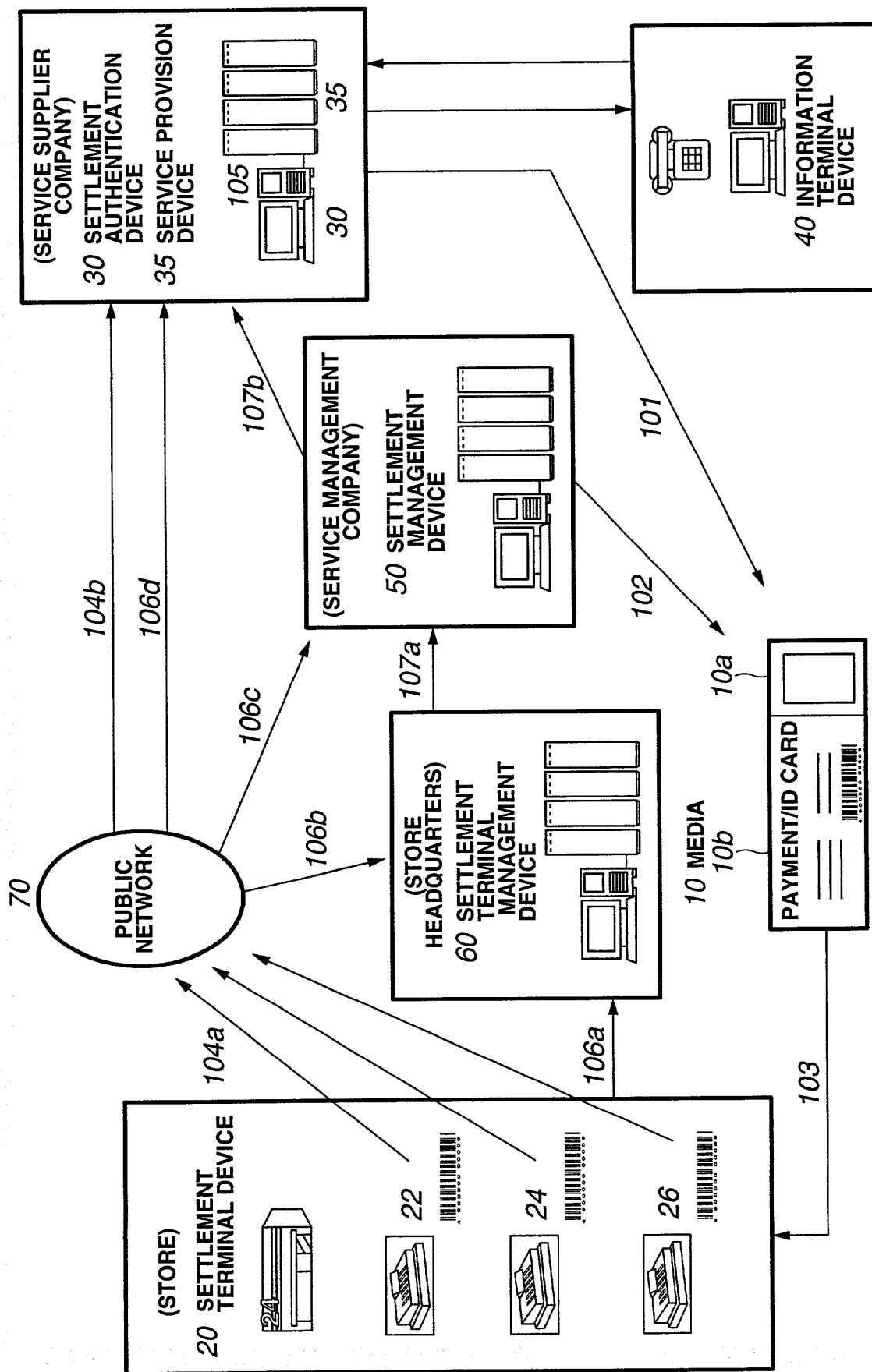


FIG. 11

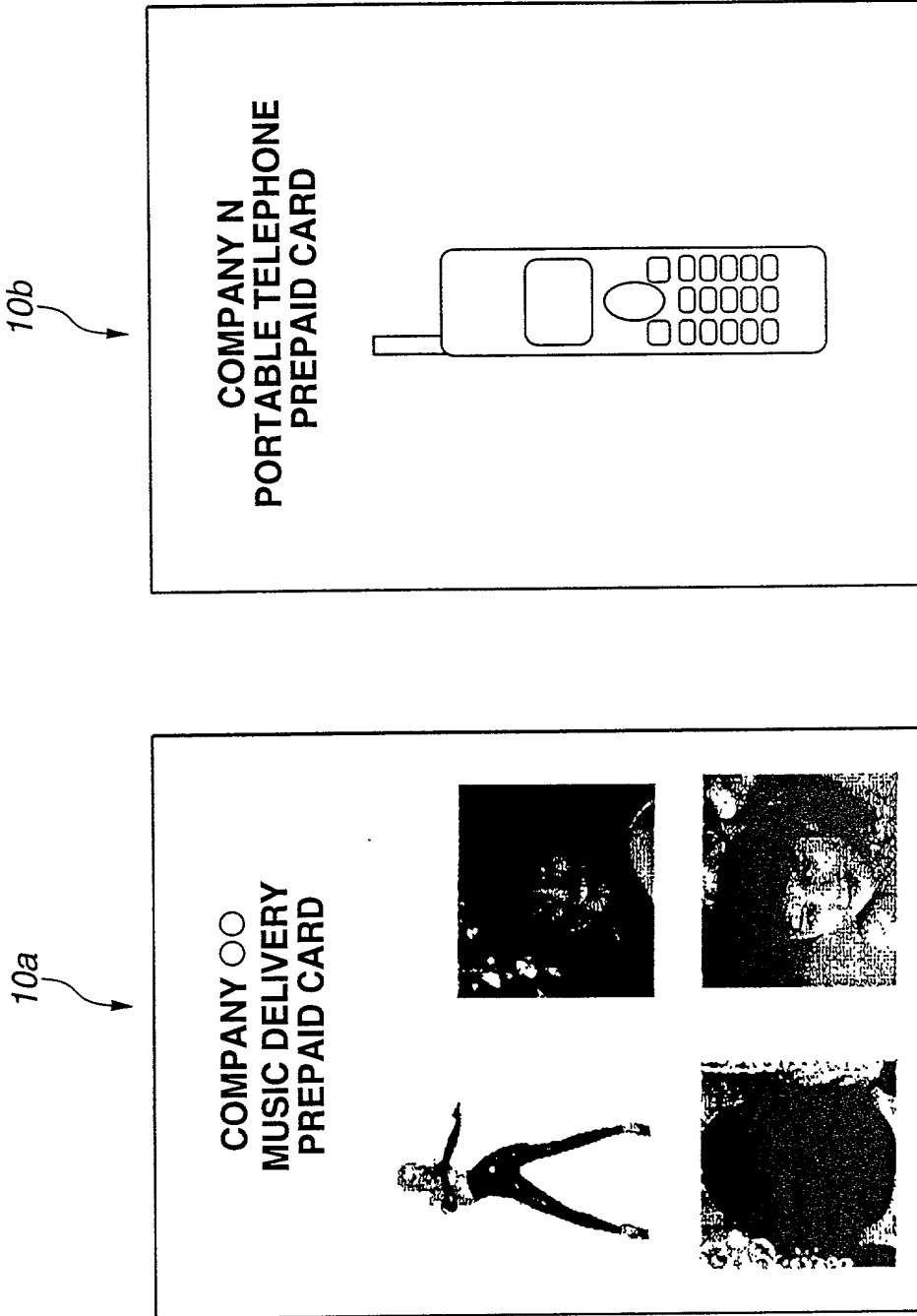


FIG.11

10

GUIDE TO ○○		ID NUMBER 1 2 3 4 - 5 6 7 8 - 9 1 2 3 - 4 5 6 7 WARNING	
110		120	
140		130	
FUND TRANSFER SLIP			
142	144	152	154
140A	140C	162	164
140B	140D		
146	148		

FIG.12

FIG. 13

GUIDE TO ○○

ID NUMBER①
1 2 3 4 - 5 6 7 8 - 9 1 2 3 - 4 5 6 7

ID NUMBER②
9 8 7 6 - 5 4 3 2 1 - 9 8 7 6 - 4 3 2 1

WARNING

①

FUND TRANSFER SLIP

|||||

|||||

|||||

|||||

②

FUND TRANSFER SLIP

|||||

|||||

|||||

|||||

FIG.13

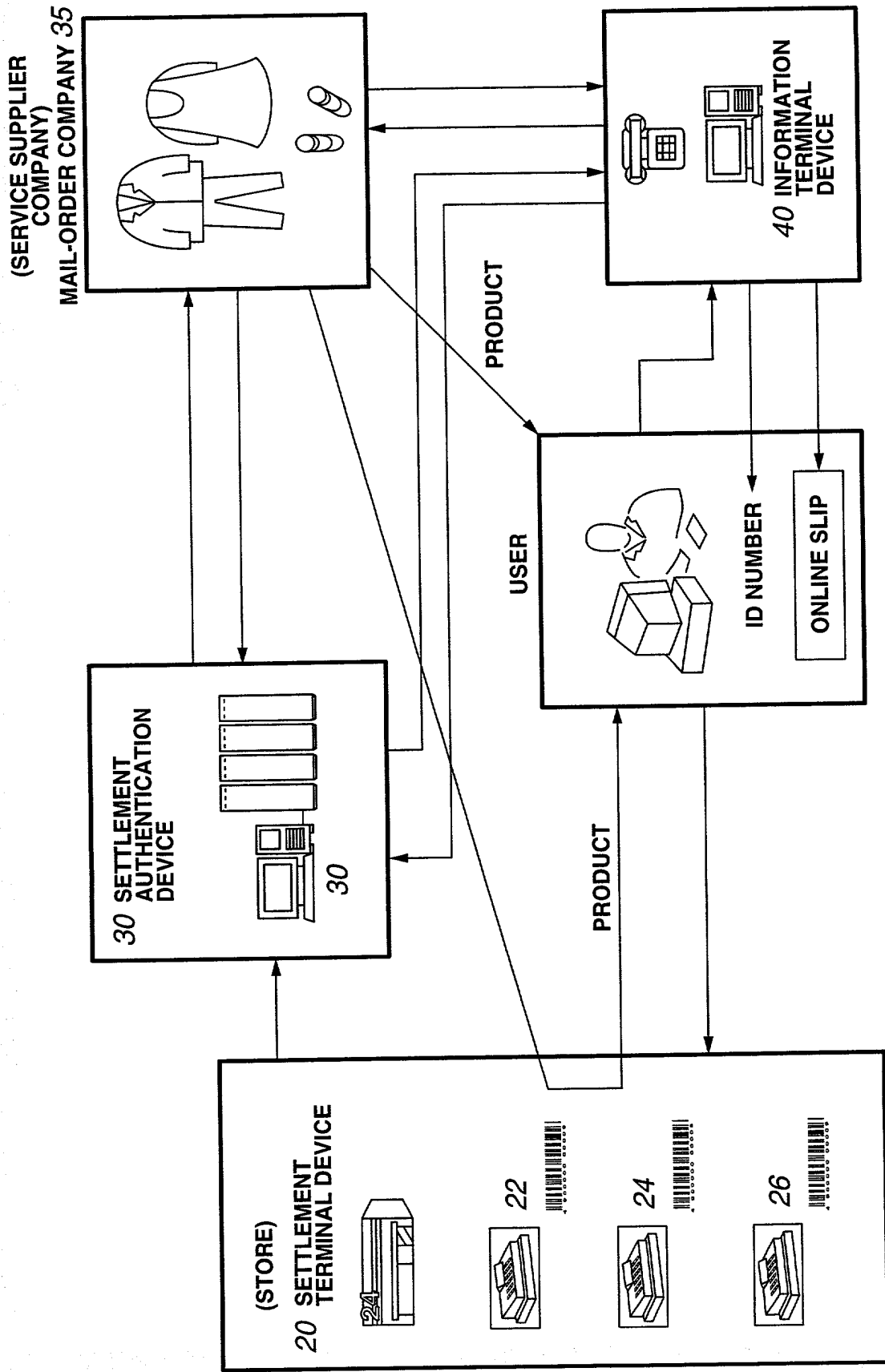


FIG.14

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that

AUG 02 2001

My residence, post office address and citizenship are as stated next to my name. I believe I am the original, first and sole inventor (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below), of the subject matter claimed and for which a patent is sought on the invention entitled:

SERVICE UTILIZATION ID NUMBER SETTLEMENT SYSTEM

the specification of which: (check one) ☐ is attached hereto.

☒ was filed on May 31, 2001 (US)

as Application Serial No. _____

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information material to examination of this application according to Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application (s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			Priority Claimed	
PCT/JP98/05503	Japan	4th/December/1998	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)		
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)		
_____	_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)		

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below.

_____	_____	_____
(Application Number)	(Filing Date)	(Status -- patented, pending, abandoned)

_____	_____	_____
(Application Number)	(Filing Date)	(Status -- patented, pending, abandoned)



I hereby claim the benefit under Title 35, United States Code, Section 120, of any United States application(s) or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby appoint the following attorneys/agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application with full power of appointment and substitution of associate attorneys and agents, and to receive all patents which may issue thereon: John R. Mattingly, Reg. No. 30,293; Daniel J. Stanger, Reg. No. 32,846; Shrinath Malur, Reg. No. 34,663; Gene W. Stockman, Reg. No. 21,021; Jeffrey M. Ketchum, Reg. No. 31,174; Scott W. Brickner, Reg. No. 34,553. Address all correspondence to:

MATTINGLY, STANGER & MALUR, P.C.
104 East Hume Avenue
Alexandria, Virginia 22301
Tel. 703-684-1120

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, Section 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date JUL. - 3, 2001 Inventor Takayuki DOKI *T. Doki*
(Typed Name and Signature)
Residence 14-14, Himonya 4-chome, Meguro-ku, Tokyo 152-0003, Japan Citizenship Japan
Post Office Address 14-14, Himonya 4-chome, Meguro-ku, Tokyo 152-0003, Japan JPX

Date _____ Inventor _____
(Typed Name and Signature)
Residence _____ Citizenship _____
Post Office Address _____